

REMARKS/ARGUMENTS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested. Claims 1-41 are pending. Claim 41 is amended by way of the present amendment.

In the outstanding Office Action, Claim 41 was rejected as anticipated by Peterson et al. (U.S. Patent Application Publication No. 20040014250, hereinafter “Peterson”); Claims 1, 2, 5, 8-10, 14, 15, 18, 20, 24, 25, 34-37, and 39 were rejected as unpatentable over Borden et al. (U.S. Patent No. 6,812,047, hereinafter “Borden”) in view of Card et al. (U.S. Patent No. 6,810,291, hereinafter “Card”); Claims 4, 12, 13, 17, 22, 23, 28, 33, and 38 were rejected as unpatentable over Borden in view of Peterson; and Claims 6, 7, 11, 19, 21, 27, and 32 were rejected as unpatentable over Borden in view of Usui et al. (U.S. Patent Application Publication No. 20040040658, hereinafter “Usui”). However, Claims 3, 16, 26, and 29-31 were objected to as dependent on a rejected base claim, but otherwise were indicated as including allowable subject matter if re-written in independent form. Claim 40 is allowed.

Applicants gratefully acknowledge the allowance of Claim 40 and the indication that Claims 3, 16, 26, and 29-31 include allowable subject matter.

With regard to the rejection of Claim 41 as anticipated by Peterson, that rejection is respectfully traversed.

Amended Claim 41 recites in part, “identifying at least one of a manufacturer, a serial number, and a part type of the component based at least on the initial thickness of the component.”

In contrast, Peterson describes a method and apparatus for determining the thickness of a layer during manufacture of an integrated device.¹ The apparatus determines the

¹See Peterson, paragraph 10.

thickness and composition of layer 106 deposited on substrate 104.² It is respectfully submitted that there is no description in Peterson of determining a manufacturer, a serial number, or a part type of the component on any basis. Thus, it is respectfully submitted that Peterson does not teach “identifying at least one of a manufacturer, a serial number, and a part type of the component based at least on the initial thickness of the component,” as recited in amended Claim 41. As Peterson does not teach each and every element of Claim 41, Claim 41 is not anticipated by Peterson and is patentable thereover.

With regard to the rejection of Claim 1 as unpatentable over Borden in view of Card, that rejection is respectfully traversed.

Claim 1 recites in part:

a radiation source configured to emit a radiation beam onto a first area of a consumable component subject to erosion by a manufacturing process, the component having an initial thickness such that the component can withstand a plurality of process runs before the erosion requires replacement of the component;

a detecting unit configured to detect a portion of the radiation beam that is refracted by the component, and to generate a radiation level signal based at least on a strength of the detected portion of the radiation beam; and

a control unit configured to determine a replacement status of the component based on said radiation level signal.

However, Borden describes a method of evaluating the thickness of a structure 10 that is **not** a consumable component. Structure 10 may be a reference structure with a fixed thickness, or a production structure that is being grown.³ In either case, the thickness of structure 10 does not decrease, and thus the structure does not need to be replaced. Accordingly, Borden does not teach or suggest “a radiation source configured to emit a radiation beam onto a first area of a consumable component subject to erosion by a

²See Peterson, paragraph 25.

³See Borden, column 8, lines 12-17.

manufacturing process” or “a control unit configured to determine a replacement status of the component based on said radiation level signal,” as recited in Claim 1.

Card describes a system that performs prediction and optimization of process based on metrics and a cost function for the process. Although Card describes that a replacement status may be one of the metrics used in prediction and optimization of a process, there is no teaching or suggestion in Card for “a control unit configured to determine a replacement status of the component **based on said radiation level signal,**” as recited in Claim 1.

Further, there is no suggestion or motivation to modify the apparatus described by Borden in the manner proposed by the outstanding Office Action, as there is no reason to replace the structure 10 described by Borden, as structure 10 is not consumed. It is respectfully noted that if a proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (C.C.P.A. 1959). See also MPEP §2143.01. In the present case, determining a replacement status of structure 10 is both unnecessary for the apparatus described by Borden and would change the principle of operation of the apparatus described by Borden. Accordingly, there is no suggestion or motivation to make the proposed combination.

Thus, as Borden and Card do not teach or suggest each and every element of Claim 1, and there is no suggestion or motivation to combine Borden and Card as proposed in the outstanding Office Action, Claim 1 (and Claims 2-13 dependent therefrom) is patentable over Borden in view of Card.

For substantially similar reasons, it is respectfully submitted that independent Claims 14 and 24 also patentably define over Borden and Card, as well as Claims 15-23 and 25-39 which depend therefrom.

With regard to the rejection of Claims 4, 12, 13, 17, 22, 23, 28, 33, and 38 as unpatentable over Borden in view of Peterson, it is noted that Claims 4, 12, 13, 17, 22, 23, 28, 33, and 38 are dependent from Claims 1, 14, or 24, and thus are believed to be patentable for at least the reasons discussed above. Further, it is respectfully submitted that Peterson does not cure any of the above-noted deficiencies of Borden. Accordingly, it is respectfully submitted that Claims 4, 12, 13, 17, 22, 23, 28, 33, and 38 are patentable over Borden in view of Peterson.

Further, with regard to the rejection of Claims 6, 7, 11, 19, 21, 27, and 32 as unpatentable over Borden in view of Usui, it is noted that Claims 6, 7, 11, 19, 21, 27, and 32 are dependent from Claims 1, 14, or 24, and thus are believed to be patentable for at least the reasons discussed above. Further, it is respectfully submitted that Usui does not cure any of the above-noted deficiencies of Borden. Accordingly, it is respectfully submitted that Claims 6, 7, 11, 19, 21, 27, and 32 are patentable over Borden in view of Usui.

Consequently, in view of the present amendment and in light of the foregoing comments, it is respectfully submitted that the invention defined by Claims 1-41 patentably distinguishes over the cited art. The present application is therefore believed to be in condition for formal allowance and an early and favorable reconsideration of this application is therefore respectfully requested.

Respectfully submitted,

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